

Claims:

1. A wireless communications system, comprising:
  - a transmitter for transmitting a modulated carrier comprising in-phase and quadrature-phase signals;
  - a receiver, comprising:
    - an antenna for receiving said modulated carrier;
    - an amplifier for amplifying said received modulated carrier;
    - a symbol demodulator, for demodulating said amplified modulated carrier into in-phase and quadrature-phase symbol representations having DC offset components;
    - a symbol decoder having in-phase and quadrature-phase inputs;
    - a subtracter for receiving said in-phase and quadrature-phase symbol representations and for subtracting time-averages of said DC offset components therefrom to produce in-phase and quadrature-phase inputs without DC offset components to said symbol decoder; and
    - a d/a converter for producing an analog signal from an output of said symbol decoder; and
    - a transducer for converting said analog signal to an acoustic signal.
2. The communications system of claim 1 further comprising an automatic gain control circuit between said antenna and said symbol demodulator.
3. The communications system of claim 1 further comprising a DC averager for receiving said in-phase and quadrature-phase symbol representations, producing a time-average of said DC component over a predetermined time, and providing said time-average to an input of said subtracter.
4. The communications system of claim 1 further comprising an estimator for receiving an output of said low pass filter to provide an estimate of said low pass filter output, and an averager for receiving said estimate to produce said time-average of said DC component.

5. A wireless communications receiver, comprising:

- an antenna for receiving a modulated carrier;
- an amplifier for amplifying said received modulated carrier;
- a symbol demodulator, for demodulating said amplified modulated carrier into in-phase and quadrature-phase symbol representations having DC offset components;
- a symbol decoder having in-phase and quadrature-phase inputs;
- a subtracter for receiving said in-phase and quadrature-phase symbol representations and for subtracting a time-average of said DC offset components therefrom to provide in-phase and quadrature-phase inputs to said symbol decoder with substantially reduced DC offset components;
- a d/a converter for producing an analog signal from an output of said symbol decoder; and
- a transducer for converting said analog signal to an acoustic signal.

6. The communications receiver of claim 5 further comprising an automatic gain control circuit between said antenna and said symbol demodulator.

7. The communications receiver of claim 5 further comprising a DC averager for receiving said output, producing a time-average of said DC component over a predetermined time, and providing said time-average to an input of said subtracter.

8. The communications receiver of claim 5 further comprising a low pass filter for receiving said output, an estimator for receiving an output of said low pass filter to provide an estimate of said low pass filter output, and an averager for receiving said estimate to produce said time-average of said DC component.

9. The communications receiver of claim 5 wherein said transducer is a speaker.

10. In a wireless communications system, a receiver comprising:

- a demodulator having an output with a DC component; and
- a subtracter for receiving said output and subtracting a time-average of said DC component therefrom.

11. The receiver of claim 10 further comprising a DC averager for receiving said output, producing a time-average of said DC component over a predetermined time, and providing said time-average to an input of said subtracter.

12. The receiver of claim 10 further comprising a low pass filter for receiving said output, an estimator for receiving an output of said low pass filter to provide an estimate of said low pass filter output, and an averager for receiving said estimate to produce said time-average of said DC component.

13. The receiver of claim 10 wherein said output of said demodulator comprises an in-phase output and a quadrature-phase output.

14. The receiver of claim 10 wherein said subtracter unit is coupled to a symbol decoder.

15. A method comprising:

- receiving a demodulator output signal;
- subtracting a time-averaged DC component from the demodulator output signal to obtain a resultant signal; and
- transmitting the resultant signal to a symbol decoder.

16. The method of claim 15 further comprising time averaging a DC component of the demodulator output signal to obtain the time-averaged DC component.

17. The method of claim 15 wherein said receiving a demodulator output signal comprises:

- receiving an in-phase output and a quadrature-phase output of the demodulator.

18. A method for compensating DC offsets in a wireless communications system comprising:

- receiving a demodulator output signal having a DC offset;
- determining a time-average of said DC offset over a predetermined time;

subtracting said time-average of said DC offset from said demodulator output signal to obtain a resultant signal; and  
transmitting the resultant signal to a symbol decoder.

19. The method of claim 18 wherein said receiving a demodulator output signal comprises receiving an in-phase output and a quadrature-phase output of the demodulator.

20. The method of claim 18 wherein said determining a time-average of said DC offset comprises low-pass filtering said demodulator output signal; estimating a DC component in said low-pass filtered demodulator output signal, and averaging said estimated DC component over a predetermined time.